

CLAIMS

What is claimed is:

1. A device for coupling a ferrule of a fiber optic cable to a fiber optic transceiver (FOT) device, comprising:
 - a connector body having an interior cavity that opens outwardly through one side of said body, along with first and second end walls having at least first and second generally aligned openings, respectively, that communicate with said cavity;
 - a guide member having an elongated guide channel, said guide channel being configured to receive at least a portion of the ferrule therethrough, said guide member being configured to be inserted into said connector body and secured therein;
 - wherein said connector body and said guide member interact with each other and the ferrule in such a manner as to secure the ferrule from any substantial movement relative to said connector body.
2. The device according to claim 1, wherein said connector body and said guide member secure the ferrule in such a position that a tip of the ferrule is readily aligned with an optical interface section of the FOT device.
3. The device according to claim 2, wherein at least a portion of said connector body is configured to be inserted into and removably secured inside a housing, said housing having a fiber optic transceiver device.

4. The device according to claim 3, wherein said tip of the ferrule is coupled with said optical interface of said FOT device when said connector body is removably secured inside said housing.
5. The device according to claim 1, wherein at least a portion of the ferrule is housed within said elongated guide channel of said guide member in such a position that a tip of the ferrule extends outward through said second opening of said connector body.
6. The device according to claim 5, wherein said second opening of said connector body is generally elongated in shape, with one end of said elongated second opening being of lesser diameter than an opposite end of said elongated second opening.
7. The device according to claim 6, wherein said guide member secures within said connector body in such a manner as to displace said tip of the ferrule, extending through said second opening, toward said lesser diameter end of said elongated second opening.
8. The device according to claim 1, wherein said guide member substantially secures the ferrule from forward-directed movement within said elongated guide channel, and said connector body substantially secures the ferrule from backwards-directed movement within said elongated channel.

9. The device according to claim 8, further comprising a ridge that extends outwardly from an underside of said connector body at such a position that upon securing said guide member into said connector body, said ridge extends down through an opening in said elongated channel at a position along the ferrule located rearward of a shoulder on the ferrule extending axially outward, wherein interaction between said ridge and said shoulder secures the ferrule from any substantial backwards-directed movement.
10. A method of securely positioning a ferrule of a fiber optic cable in relation to a fiber optic transceiver (FOT) device, comprising the steps of:
- securing at least a portion of the ferrule within an elongated channel of a guide member in such a manner as to substantially prevent forward-directed movement of the ferrule within said guide channel; and
 - securing said guide member into an interior cavity of a connector body in such a manner as to substantially prevent backwards-directed movement of the ferrule within said guide channel.
11. The method according to claim 10, further comprising the step of extending a ridge out from a wall of said connector body and through an opening in said elongated channel, said ridge extending out at a location that corresponds to a position on the ferrule lying to one side of a shoulder that extends axially outward from the ferrule, said ridge engaging said shoulder so as to substantially prevent backwards-directed movement of the ferrule within the guide channel.

12. The method according to claim 10, further comprising the step of extending a tip of the ferrule through an opening within an end wall of said connector body.
13. The method according to claim 12, further comprising the step of substantially securing said tip of the ferrule from movement within said opening.
14. The method according to claim 13, wherein said step of securing said tip of the ferrule comprises displacing said tip of the ferrule from a first end of said opening to a second end of said opening, said second end being of lesser diameter than said first end.
15. The method according to claim 10, further comprising the steps of:
inserting said connector body into a housing containing said FOT device; and
coupling said tip of the ferrule to said FOT device by removably securing said connector body to said housing.
16. A fiber optic connection device capable of securely[^] positioning a ferrule of a fiber optic cable in relation to a fiber optic transceiver (FOT) device, comprising:
means for securing at least a portion of the ferrule;
means for substantially preventing forward-directed movement of the ferrule upon the ferrule being generally secured; and
means for substantially preventing backwards-directed movement of the ferrule upon the ferrule being generally secured.

17. The device according to claim 16, wherein said means for generally securing at least a portion of the ferrule includes a guide member having an elongated channel into which is inserted at least a portion of the ferrule.

18. The device according to claim 17, wherein said means for preventing forward-directed movement of the ferrule includes a portion of said elongated channel engaging a shoulder on the ferrule.

19. The device according to claim 17, wherein said means for preventing backwards-directed movement of the ferrule includes means for securing said guide member within a cavity of a connector body.

20. The device according to claim 19, wherein said means for preventing backwards-directed movement of the ferrule includes means for substantially preventing backwards-directed movement of a shoulder on the ferrule.

21. The device according to claim 20, wherein securing said guide member within a cavity of a connector body results in a ridge extending out from a surface of the connector body at a position along the ferrule located rearwardly of said shoulder, said ridge substantially preventing backwards-directed movement of the ferrule by said ridge engaging said shoulder.

22. The device according to claim 16, further comprising means for substantially preventing movement of a tip of the ferrule along a second axis, wherein said second axis lies perpendicular to a first axis associated with backwards and forwards-directed movement of the ferrule.

23. The device according to claim 22, wherein said means for preventing movement of said tip of the ferrule along a second axis includes means for displacing said tip of the ferrule from a first, wide end of an opening to a second, narrow end of said same opening.

24. The device according to claim 19, further comprising means for coupling said tip of the ferrule to the FOT device.

25. The device according to claim 24, wherein said coupling means comprises means for removably securing said connector body to a housing containing the FOT device.

26. A fiber optic connection device for connecting a ferrule of a fiber optic to a fiber optic transceiver (FOT) device, comprising:

a hollow connector body having an interior cavity that opens outwardly through one side of said body, along with first and second end walls having generally aligned first and second openings, respectively, that communicate with said cavity; and

a guide member having an elongated guide channel configured to receive at least a portion of the ferrule therethrough, said guide member capable of being inserted into

said cavity of said connector body and secured therein in such a manner that said guide channel generally aligns with said first and second openings on said connector body; and

wherein the ferrule, having a shoulder that extends axially outward, is retained in said elongated guide channel of said guide member in such a position that a tip of the ferrule extends outward through said second opening of said connector body, the ferrule being substantially secured from forward movement in said guide channel due to said guide member engaging said shoulder on the ferrule, and the ferrule being substantially secured from backwards movement in said guide channel due to said connector body engaging said shoulder of the ferrule.

27. The fiber optic connection device according to claim 26, wherein said connector body engages said shoulder of the ferrule by means of a ridge that extends outwardly from an underside of said connector body, said ridge extending out at a location that corresponds to a position on the ferrule lying to one side of said shoulder opposite said tip of the ferrule.

28. The fiber optic connection device according to claim 27, wherein said elongated guide channel comprises a hollow tube having an opening within a top surface of said tube through which said ridge of said connector body extends.

29. The fiber optic connection device according to claim 26, wherein said second opening of said connector body is generally elongated in shape along a first axis, with

one end of said elongated second opening being of lesser diameter than an opposite end of said elongated second opening.

30. The fiber optic connection device according to claim 29, wherein the insertion and retention of said guide member into said connector body results in said tip of the ferrule, extending outward through said elongated second opening of said connector body, to be displaced toward said lesser diameter end of said elongated second opening.

31. The fiber optic connection device according to claim 30, wherein said lesser diameter end of said elongated second opening is appropriately dimensioned so as to prevent movement of said tip of the ferrule along a second axis perpendicular to said first axis.

32. The fiber optic connection device according to claim 26, wherein said connector body and guide member are both monolithic structures.

33. The fiber optic connection device according to claim 26, further comprising a housing containing a fiber optic transceiver (FOT) device.

34. The fiber optic connection device according to claim 33, wherein the fiber optic transceiver (FOT) device includes an optical interface designed to securely couple with said tip of the ferrule.

35. The fiber optic connection device according to claim 34, wherein at least a portion of said connector body can be inserted into and removably secured inside said housing.

36. The fiber optic connection device according to claim 35, wherein insertion of said connector body into said housing brings said tip of the ferrule into alignment with said optical interface of the fiber optic transceiver (FOT) device.

37. The fiber optic connection device according to claim 34, wherein said tip of the ferrule becomes coupled to said optical interface of the fiber optic transceiver (FOT) device upon said connector body being removably secured inside said housing.